

Missouri Department Of Elementary And Secondary Education

Education Technology Strategic Plan: 2002-2006



"Making a Positive Difference Through Education and Service"
Dr. D. Kent King, Commissioner

March 2002

TECHNOLOGY REPORT

2002-2006

Missouri Education Technology Strategic Plan

Prepared by the
Missouri Department of Elementary and Secondary Education
Division of School Improvement

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Education Technology Plan

Introduction

The Missouri Education Technology Strategic Plan provides Missouri policy makers and school districts with a blueprint that guides and facilitates future state and local technology planning, funding, implementation, and evaluation. The 2002 Plan builds on the progresses of the last five-year plan. It continues to promote technology access, use, professional development, and partnerships. It also addresses technology and digital age literacy, problem solving, creativity, effective communication, collaboration, and high productivity skills essential for Missouri citizens in a rapidly changing global economy.

The Department of Elementary and Secondary Education (DESE) developed the first education technology plan in 1996. With funding from the Goals 2000: Educate America Act, a state panel and a technology taskforce were formed to develop *The Show-Me Plans: Mapping a Brighter Future*. These plans were developed to help districts institute effective local school improvement plans. The State Board of Education approved the plans in late 1996.

The technology portion of *The Show-Me Plans* detailed various technology programs and services provided by the Department and other agencies across the State. Also included was the 1994 Department document Using Technology in Missouri's Schools – A Planning Guide to help districts develop effective technology plans to improve teaching and learning. *The Show-Me Technology Plan*, however, did not include specific goals and benchmarks.

In the spring of 1997, the Department identified five major education technology goals and 21 benchmarks, with all to be met by June 30, 2002. The goals were predicated on Missouri's Show-Me Curriculum Standards, the Missouri School Improvement Program, the Department's Strategic Plan, an interdivisional Technology Articulation and Collaboration Team, and the national Technology Pillars. They addressed technology access, use, and professional development as well as the forming of partnerships.

Each year, the plan was evaluated using data from the Census of Technology (COT), Missouri School Improvement Program, and technology program records and reports. A planning technology task force began reviewing and rewriting the state plan in July 2000. Taskforce members represented a wide cross-section of Missouri education technology experts and organizations, as noted in Appendix A. Their work, and the work of others who provided feedback on earlier drafts, was key to the development of the 2002 technology plan.

By 2001, COT data indicated that all districts were connected to the Internet, as were 97% of 2253 school buildings, and 85% of 60,000 plus classrooms. The number of students per Internet-connected computer dropped from 24 to 5. Data also indicated there is much work that still needs to be done. The 2002 plan strives to ensure equity of resources. It emphasizes that teachers have sufficient access to technology and quality professional development as to be able to integrate technology into teaching and learning practices that have positive impacts on student performance and academic achievement.

For additional information regarding the Education Technology Strategic Plan, contact the Instructional Technology section by telephone at 573-751-8247 or by email at instrtech@mail.dese.state.mo.us.

This report is a one of several documents that examine the use and effectiveness of educational technologies in Missouri. Other evaluative information can be found in the Missouri Census of Technology Reports, eMINTS Program research studies, annual technology program reports, project descriptions and annual evaluation narratives, and *Newsline* articles. These documents can be found at www.dese.state.mo.us/divimprove/instrtech/.

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Vision and Mission

The Department of Elementary and Secondary Education (DESE) champions high-quality education and strives to help schools provide effective instruction that results in high student performance. The DESE Strategic Plan states “we believe that we can make a positive difference in the quality of life for all Missourians by providing exceptional service to students, educators, schools, and citizens.” The key outcome of the DESE plan is “Increased percentage of students achieving the Show-Me Standards at targeted performance levels in the Missouri Assessment Program.”

The 2002 Missouri Education Technology Strategic Plan addresses the Department’s mission statement and strategic plan. We believe that effective use of technology can make a positive difference in the quality of teaching and learning, and increase student performance. While many of Missouri’s school systems have developed effective infrastructure, many are not yet using their technologies in innovative ways. Effective technology integration is a slow process that requires changes in teaching. The Department’s vision is one where all schools have exceptional performance. The vision lists the attributes of an effective school.

Vision

Students achieve higher performance and deeper engagement in academic endeavors when able to access resources through a variety of modalities appropriate to individual abilities and learning styles. With proper technology planning, training, and resources, effective schools combine high-quality education with equity for every learner. Teachers are better able to facilitate student learning, expand local curriculum, and diversify instructional practices. Administrators use technology for increased effectiveness in communication, data management, and information exchange.

Technology is viewed as a basic resource for teaching and learning, for problem solving, communication, collaboration, and information exchange. Schools plan, implement, and evaluate the role technology plays in improving student performance, teacher effectiveness, and school administration. Technology is easily and readily available, and students, teachers, faculty, and administrators are provided the training and technical assistance necessary to effectively use the technologies.

Business and higher education partners assist schools in achieving their goals by providing the expertise and resources needed to extend the learning community and integrate learning innovations into the curriculum. School partners offer districts a variety of assistance, from gaining access to talented people and the latest technology to place-based learning and improving community relationships and making better career opportunities available to students.

Mission

The Missouri Education Technology Strategic Plan mission is to provide guidance and resources that help enrich instructional effectiveness and improve student performance by creating classrooms where teachers integrate multi-media technology into inquiry-based, student-centered, interdisciplinary, and collaborative teaching practices.

Background

Since the mid 1990s, there has been a common theme about how information technology is transforming the way business operates, and that public school education must prepare students with 21st century skills to thrive in the digital age. Since the mid 1990s, the Missouri General Assembly, the Department of Elementary and Secondary Education, and public school districts have invested heavily in instructional and administrative technologies. While schools have made great progress in acquiring their technology infrastructures, the emphasis on training to support the integration of technology into classroom teaching remains key.

Technology Legislation and Funding

With the passage of the Outstanding Schools Act (1993), the Missouri General Assembly began appropriating funds dedicated to education technology. Since the 1994-95 school year, over \$200 million has been appropriated for administrative, instructional, and vocational technology. The first emphasis was on building an adequate hardware and connectivity infrastructure. A state technology grants program was established that provided 1) entitlement funds to districts, based on a distribution formula, and 2) discretionary grants for demonstration projects that applied technology solutions to real, documented instructional needs. Two types of discretionary grant programs were created: one to promote curriculum and instruction via the development of technology networks and professional development; the other to develop capacity for two-way interactive distance learning for the delivery of high school courses.

Technology Programs Implemented

Annually, DESE contracts with the Missouri Research and Education Network (MOREnet) to work with the 40-plus telephone companies in the State to help connect districts to the Internet. MOREnet also provides Internet-related software and training, help-desk assistance, research and development, and online resources that include an electronic encyclopedia, EBSCO host periodicals, and Gale databases. Today, 512 of 524 districts have T1 or better connectivity via their participation in the DESE-MOREnet program.

As the infrastructure was put into place, the importance of technology professional development was also recognized. The State Board of Education mandated in November 1997 that districts earmark amounts equal to 20% of their state technology funds for technology-related training. Also, in 1997, the Multimedia Interactive Networked Technologies (MINTs) pilot project was initiated through a cooperative effort of MOREnet, the Department, Southwestern Bell, and 12 elementary classrooms in six St. Louis County school districts. The purpose of the MINTs pilot was to determine whether effective training for school personnel in combination with sophisticated technology would change teaching styles and enhance student achievement. This pilot project provided credible evidence that it can!

Because of the positive changes in teaching practices, in student attendance, behaviors and achievement, and in parent involvement, MINTs was expanded statewide in 1999-2000. The *enhancing* Missouri's Instructional Networked Teaching Strategies (eMINTS) program now serves over 400 teachers in 125 districts across the state. The Program is transforming the instructional process by supporting elementary teachers as they change teaching practices to student-centered, inquiry-based approaches that use a wide range of multimedia technologies in classrooms designed for the 21st century. It is transforming the way students learn – a way that engages students in learning through tools and resources that foster cooperation, collaboration, problem solving, creativity, and higher order thinking skills.

Education technology is not the solution in and of itself, but when integrated into classroom curriculum and instruction, the combination produces dramatic results. Test results from the 2001 Missouri Assessment Program clearly indicate that students in eMINTS classrooms outperform other students – other students in the same districts and students statewide, as a whole. While districts can use state technology entitlement and discretionary grants, professional development funds, federal programs, and other resources to promote the technology integration model, expansion into additional classrooms and grade levels is expensive, time-intensive, labor-intensive, and slow moving.

Technology Focus Areas

The 2002 Missouri Education Technology Strategic Plan is centered around five technology focus areas (TFAs), to help guide effective, integrated teaching practices across Missouri, that help **all** students and **all** teachers in **all** districts.

1. Student Learning (includes technology skills)
2. Teacher Preparation and Delivery of Instruction
3. Administration / Data Management / Communication Processes
4. Resource Distribution and Use
5. Technical Support

Status of 1997 Goals

Status of 1997 Education Technology Goals

Progress in Meeting Missouri's Technology Goals, 1997-2001

The Missouri Educational Technology Plan developed in 1997, included 5 major goals and 21 benchmarks to be reached by June 2002. The table below charts the progress of those goals, from 1997 through 2001. Most of the information is based on the annual Missouri Census of Technology. First administered in 1997, the Census was revised in 1998 and 1999. Some items were improved to lessen their ambiguity; other items were added to provide a clearer picture of the educational technologies available and in use in Missouri's public schools. Note that benchmarks have been "upgraded" periodically. For example, the overall students-to-computer ratio was changed from 5 to 1 to 4:1 in 1998. The percentages of students and teachers using technology were increased from 50 percent to 80 percent in 1999. Modifications are marked with an asterisk and are underscored.

Table 1: Status of Missouri Educational Technology Goals and Benchmarks, 1997-2001

Technology Goals and Benchmarks	Status				
	1997	1998	1999	2000	2001
1. All Missouri teachers will have the training and support they need to help students learn through computers and online resources					
*All school buildings will have <u>at least 80%</u> of teachers trained on instructional applications of computers and online resources	27%	55%	--	--	--
• teachers with intermediate and/or advanced technology skills	NA	NA	65%	68%	72%
• principals with intermediate and/or advanced technology skills	NA	NA	76%	84%	87%
• district administrators with intermediate and/or advanced technology skills	NA	NA	75%	81%	84%
*All school buildings will have <u>at least 80%</u> of students trained in the use of computers and basic computer software	76%	86%	--	--	--
• students who routinely use educational software	NA	NA	76%	78%	78%
• students who routinely use computers for writing assignments	NA	NA	58%	61%	67%
*All school buildings will have <u>at least 80%</u> of students trained on instructional applications of the internet and online resources	16%	40%	--	--	--
• students who routinely use the internet, browse the web	NA	NA	50%	55%	63%
All students will be computer literate by age 12	NA	NA	70%	78%	84%

Status of 1997 Goals

Table 1: Status of Missouri Educational Technology Goals and Benchmarks, 1997-2001
(continued)

	1997	1998	1999	2000	2001
2. All Missouri students and teachers will have modern computers in their classrooms					
All districts will have a board-approved technology plan	90%	93%	96%	99%	100%
• technology plans tied to school improvement plans	NA	71%	95%	96%	98%
• technology plans approved by State	60%	75%	82%	89%	95%
State will attain a students-to-computer ratio of 4:1					
• students per all computers	7:1	6.4:1	4.8:1	4.2:1	3.8: 1
• students per internet-capable computer	14:1	8.3:1	6.1:1	5.1:1	4.2:1
All classrooms will have at least one modern computer	NA	52%	53%	69%	76%
Over half of classrooms will have an internet-connected computer, printer, and projection device	NA	17%	15%	16%	11%
3. Every Missouri classroom will be connected to the internet					
All districts will be connected to the internet	95%	97%	100%	100%	100%
• districts with direct connection	NA	NA	85%	92%	96%
• districts with T1 connection or better	NA	NA	76%	88%	91%
• administrators who routinely use the internet, web	NA	NA	69%	78%	71%
• administrators who routinely use email communication	NA	NA	77%	86%	74%
All school buildings will be connected to the internet	80%	90%	95%	97%	97%
• buildings with direct connection	NA	68%	83%	89%	79%
• teachers who routinely use the internet, web	NA	NA	61%	69%	67%
• teachers who routinely use email communication	NA	NA	60%	69%	65%
All classrooms will be connected to the internet					
• classrooms wired for access	NA	56%	75%	83%	85%
• classrooms with at least one internet-connected computer	NA	NA	48%	63%	55%
All teachers will use computers and online resources to collect educational resources	14%	52%	54%	59%	55%
*State will attain a students-to-internet-connected-computer ratio of <u>6:1</u>	24:1	14:1	8.6:1	6.6:1	5.0:1
*All districts will participate in and benefit from the e-rate program	NA	96%	97%	97%	97%
• districts participating via MOREnet application		506	508	510	510
• Missouri's overall discount savings		\$23.6m	\$28.6m	\$72.4m	TBD
At least 80 communities will establish community information networks	5	20	29	30	30

Status of 1997 Goals

Table 1: Status of Missouri Educational Technology Goals and Benchmarks, 1997-2001
(continued)

	1997	1998	1999	2000	2001
4. Effective and engaging software and online resources will be an integral part of the curriculum in every Missouri school					
All teachers will incorporate student computer and internet access in their classroom instruction	6%	52%	60%	67%	63%
• teachers who routinely use educational (computer and online) software	NA	NA	69%	72%	59%
*All school buildings will have <u>at least 80%</u> of students using computers and online resources to collect educational resources or to do research for class	12%	61%	--	--	--
• students who routinely use computers and online resources for research information collection	NA	NA	52%	57%	57%
All districts will integrate technology into student learning as measured by the Missouri School Improvement Program (MSIP), Standard 7.5	91 of 105	90 of 105	96 of 96	112 of 113	103 of 104
• districts with technology incorporated into curriculum guides	NA	NA	73%	81%	(492 of 523) 88%
All districts will integrate the software and online resources available through the Missouri Research and Education Network (MOREnet)					
• students who routinely use the Ebsco host, other databases, and/or electronic encyclopedia	NA	27%	36%	37%	38%
5. Missouri school districts will involve and collaborate with partners who can help improve the teaching and learning process with the use of technology					
Over half of districts will form partnerships with business and higher education to help with technology planning, implementation, and evaluation	NA	22%	27%	29%	32%
Over half of districts will take advantage of purchasing technology products and services through the State's technology contract	NA	7%	4%	8%	11%

Strengths and Weaknesses

The Census of Technology data, Missouri School Improvement Program findings, and program records helped the technology planning committee and Department to identify the strengths and weaknesses listed below. The 2002 Missouri Education Technology Strategic Plan was developed around the noted strengths and areas of concern.

Strengths

- District and building infrastructure
- District and building connectivity and bandwidth
- Teacher and student computer literacy

Weaknesses

- Classroom technology and connectivity equity
- Teacher and student use of technology
 - integrated curriculum
 - instructional strategies
 - professional development
 - student learning and performance
 - assessment

2002 Goals and Objectives

2002-2006 Education Technology Goals and Objectives

With the assistance of key education technology groups throughout the state (see Appendix A), the Department of Elementary and Secondary Education identified 5 goals and 15 objectives to be realized by June 30, 2006. Unless otherwise stated, all goals and objectives are set at the 100% completion level.

- 1) **Student learning** (academic achievement and performance) will be improved through the use of education technologies
 - a) The State Board of Education and the Department of Elementary and Secondary Education will establish and endorse state education technology standards for students and monitor progress on a regular ongoing basis
 - The technology advisory committee will recommend that the state adopt the ISTE National Educational Technology Standards (NETS)
 - The Department will align NETS to Show-Me Standards where applicable
 - The Department will provide assessment tools to survey and evaluate student progress on the NETS
 - b) Districts will establish and endorse state education technology standards for students and monitor progress on a regular ongoing basis. Districts will:
 - adopt the NETS or similar standards and incorporate them in school improvement and technology plans
 - incorporate technology standards into curriculum guides
 - develop and administer local assessments of student technology competencies
 - collect, analyze and report data to assess effect of technology integration on student performance
 - c) Districts will expand curricular offerings to meet the needs of high school students.
 - Districts will provide to students course offerings via distance learning that otherwise would not be provided by the districts
- 2) **Teacher preparation and delivery of instruction** (performance) will be improved through the use of education technologies
 - a) The State Board and the Department will establish and endorse state education technology standards for teachers and administrators on a regular ongoing basis
 - The Technology Advisory Committee will recommend that the state adopt the ISTE National Educational Technology Standards (NETS)
 - The Department will align the standards to teacher and administrator evaluation models where appropriate
 - The Department will provide assessment tools to survey and evaluate progress on the NETS
 - b) Districts will establish and endorse state education technology standards for teachers and administrators and monitor progress on a regular ongoing basis. Districts will:
 - develop a recruitment and selection process for teachers and administrators that incorporates technology standards

2002 Goals and Objectives

- ☐ develop and evaluate teacher and administrator professional development plans that address technology standards
 - ☐ incorporate technology competencies in the evaluation of teachers and administrators
 - c) Teachers will enhance instructional teaching strategies and will routinely use equipment, print/video/digital content, multimedia, and networked applications. Teachers will:
 - ☐ fully integrate technology in all core curriculum areas
 - ☐ incorporate instructional delivery strategies that promote authentic project-based learning opportunities, place-based learning, student teamwork, collaboration, and communication
 - ☐ communicate goals and expectations to students and parents
 - ☐ assess and track student learning
- 3) The teaching and learning process will be enhanced through the use of technology for **administration, management, and communications**
- a) Districts will develop and maintain a three-year technology planning process that will:
 - ☐ include broad committee membership
 - ☐ develop and manage an infrastructure that supports [existing and future] administrative and instructional functions
 - ☐ build a budget that includes the allocation of 25% of the funds to professional development activities, aligns resources with needs and covers the total cost of ownership, including human resources
 - b) Districts will enhance administrative and management processes through the use of technology. Districts will:
 - ☐ incorporate appropriate technology tools to facilitate data and information collection, analysis and reporting (knowledge management)
 - c) Districts will communicate with and inform parents, community members, and others about key education technology issues confronting policymakers, administrators, and educators. Districts will:
 - ☐ increase parent and community involvement in the education process through the use of technological communications
 - ☐ develop a technology-mediated feedback mechanism for parents and patrons
 - ☐ form collaborative relationships with parents, community members, higher education institutions, Department staff, and others to help with technology planning, implementation, and evaluation
 - ☐ seek input from parents, community members, business and industry representatives, and others to determine current and emerging workforce skills needed in the community
 - ☐ work with higher education institutions (and other educational partners as appropriate) to prepare pre-service administrators and teachers for the district's community and provide inservice for practicing administrators and teachers for the integration of technology, the enhancement of teaching strategies, and the awareness and use of emerging technologies

2002 Goals and Objectives

- 4) All school administrators, teachers, staff, and students will have **equitable access** to education technologies that promote student performance and academic achievement
 - a) Districts will provide equitable access to an infrastructure with converged technology
 - b) Districts will build and maintain the capability to support the technologies/infrastructure. Districts will:
 - establish at least one LAN with dedicated Internet connectivity using not more than 70% bandwidth capacity
 - connect all district buildings to a WAN
 - ensure that 100% of administrators, teachers and staff have access to the technologies
 - provide web services and email accounts
 - comply with CIPA filtering regulations, participate in the e-rate program and earmark the discounts (savings) for technology-related activities
 - c) School buildings will be connected to the district LAN/WAN and the Internet. Buildings will:
 - establish a LAN that connects to the district WAN and the Internet to support voice, data, and video
 - have a video conferencing system
 - have a multimedia distribution system that includes cable/TV reception, satellite/ITFS broadcast reception, and/or an internal video network with appropriate licenses
 - d) Instructional classrooms will be connected to the district LAN and the Internet. Classrooms will have the following:
 - telephone access
 - 2:1 ratio of students per Internet-connected computer/computing device
 - teacher workstations that include a computer, printing access, a projection device and an interactive whiteboard
 - access to multimedia distribution system
- 5) All school administrators, teachers, staff, and students will have adequate **technical support**
 - a) Districts will provide dedicated personnel to support education technology use. Districts will:
 - employ a district technology coordinator/director to oversee technical purchases, maintenance, upgrades and instructional support
 - b) Districts will provide buildings with adequate support. Buildings will have the following:
 - at least 1.0 technical support FTE per building or 1.0 FTE for every 300 workstations
 - 80% of the technical problems fixed in 24 working hours
 - at least 1.0 instructional technology support FTE per building or 1.0 FTE for every 150 teachers

Strategies for Meeting Goals and Objectives

The following lists the strategies identified to help meet the 2002 Missouri Educational Technology Goals.

Goal 1: Student learning (academic achievement and performance) will be improved through the use of educational technologies

<u>Objectives</u>	<u>Strategies</u>
<p>A. The State Board of Education and DESE will establish and endorse state education technology standards for students and monitor progress on a regular ongoing basis</p> <ul style="list-style-type: none">• the technology advisory committee will recommend that the state adopt the ISTE National Educational Technology Standards (NETS)• DESE will align NETS to the Show-Me Standards where applicable• DESE will provide assessment tools to survey and evaluate student progress on the NETS	<p>The Department will work with others to:</p> <ul style="list-style-type: none">• establish, endorse, and promote Missouri student technology standards• review and update curriculum frameworks to help districts integrate technology into curriculum, assessment and professional development• develop and promote assessment tools• develop and promote reporting tools
<p>B. Districts will establish and endorse state education technology standards for students and monitor progress on a regular ongoing basis. Districts will:</p> <ul style="list-style-type: none">• adopt the NETS or similar standards and incorporate them in school improvement and technology plans• incorporate technology standards into curriculum guides• develop and administer local assessments of student technology competencies• collect, analyze and report data to assess effect of technology integration on student performance	<p>The Department will work with others to:</p> <ul style="list-style-type: none">• assist schools with incorporating standards into curriculum guides, technology plans, and school improvement plans• identify and provide training and resources to help teachers integrate technology in the classroom• share and showcase best practices related to curriculum, student projects, etc.

(Continued)

Goal 1: Student learning (continued)

<u>Objectives</u>	<u>Strategies</u>
<p>C. Districts will expand curricular offerings to meet the needs of high school students</p> <ul style="list-style-type: none">• districts will provide course offerings via distance learning that otherwise would not be provided by the districts	<p>The Department will work with others to:</p> <ul style="list-style-type: none">• help districts find and/or provide interactive distance learning courses• identify and provide training to districts on the development, delivery, and technical support of technology delivered courses• identify, promote or purchase television programming rights and electronic resources for statewide or consortia use

Goal 2: Teacher preparation and delivery of instruction (performance) will be improved through the use of educational technologies

<u>Objectives</u>	<u>Strategies</u>
<p>A. The State Board of Education and DESE will establish and endorse state education technology standards for teachers and administrators on a regular ongoing basis</p> <ul style="list-style-type: none">• the technology advisory committee will recommend that the state adopt the ISTE National Educational Technology Standards (NETS)• the Department will align standards to teacher and administrator evaluation models• the Department will provide assessment tools to survey and evaluate progress on the NETS	<p>The Department will work with others to:</p> <ul style="list-style-type: none">• establish, endorse, and promote Missouri teacher and administrator technology standards• review and update teacher and administrator evaluation models• develop assessment tools• develop reporting tools

(Continued)

Goal 2: Teacher preparation and delivery of instruction (continued)

<u>Objectives</u>	<u>Strategies</u>
<p>B. Districts will establish and endorse state education technology standards for teachers and administrators and monitor progress on a regular ongoing basis. Districts will:</p> <ul style="list-style-type: none">• develop a recruitment and selection process for teachers and administrators that incorporates technology standards• develop and evaluate teacher and administrator professional development plans that address technology standards• incorporate technology competencies in the evaluation of teachers and administrators	<p>The Department will work with others to:</p> <ul style="list-style-type: none">• incorporate technology in teacher recruitment and selection process and tools• identify, promote and/or provide training that promotes effective technology integration• promote teacher and administrator technology competencies and skills
<p>C. Teachers will enhance instructional teaching strategies and will routinely use hardware, equipment, print/video/digital content, multimedia, and networked applications. Teachers will:</p> <ul style="list-style-type: none">• incorporate instructional delivery strategies that promote authentic project-based learning opportunities, place-based learning, student teamwork, collaboration, and communication• communicate goals and expectations to students and parents• assess and track student learning• participate in professional development	<p>The Department will work with others to:</p> <ul style="list-style-type: none">• promote collaboration among classroom, library, instructional technology, and other teachers• identify and showcase best practices on effective professional development, collaboration, and instructional strategies and resources• promote alignment of technology standards in teacher education programs and teacher certification• secure and promote the awarding of credits and/or continuing education units for participation in approved professional development programs• integrate inquiry-based teaching and technology in Missouri Standards for Teacher Education Programs (MoSTEP)

2002 Strategies

Goal 3: The teaching and learning process will be enhanced through the use of technology for **administration, management, and communications**

Objectives

- A. Districts will develop and maintain a three-year technology planning process that will:
- include broad committee membership
 - develop and manage an infrastructure that supports [existing and future] administrative and instructional functions
 - build a budget that includes the allocation of 25% of the funds to professional development activities, aligns resources with needs, and covers the total cost of ownership

Districts will enhance administrative and management processes through the use of technology. Districts will:

- incorporate appropriate technology tools to facilitate data and information collection, analysis and reporting (knowledge management)

Strategies

The Department will work with others to:

- identify, disseminate, and/or provide district technology plan development and implementation resources
- help districts align technology plans to new state and federal technology plans and programs

The Department will work with others to:

- identify and promote technological tools for knowledge management
- identify, disseminate, and/or provide white papers, open forums, and other information regarding technology vendors, networking, filtering software, distance learning, etc.

(Continued)

Goal 3: Administration, management, and communications (continued)

Objectives

- C. Districts will communicate with and inform parents, community members, and others about key education technology issues confronting policymakers, administrators, and educators. Districts will:
- increase parent and community involvement in the education process through the use of technological communications
 - develop a technology-mediated feedback mechanism for parents, patrons, community, etc.
 - form collaborative relationships with parents, community members, higher education institutions, DESE staff, and others to help with technology planning, implementation, and evaluation
 - seek input from parents, community members, business and industry representatives, and others to determine current and emerging workforce skills needed in the community
 - work with higher education institutions (and other educational partners as appropriate) to prepare pre-service administrators and teachers for the district's community and provide inservice for practicing administrators and teachers for the integration of technology, the enhancement of teaching strategies, and the awareness and use of emerging technologies

Strategies

The Department will work with others to:

- Identify and promote technological tools and practices that facilitate parent and community communications
- Identify, disseminate, and showcase best practices on forming collaborative relationships through effective use of digital content and networked applications
- Build district and college of education relationships that promote
 - pre-service teachers having field experiences in eMINTS classrooms,
 - professors incorporating eMINTS teaching and learning activities in elementary teacher education programs
 - eMINTS teachers being awarded credit for completing professional development

2002 Strategies

Goal 4: All school administrators, teachers, and students will have **equitable access** to educational technology that promotes student performance and academic achievement

<u>Objectives</u>	<u>Strategies</u>
A. Districts will provide equitable access to an infrastructure with converged technology.	The Department will work with others to: <ul style="list-style-type: none">• help districts provide equitable access to technology that converges voice, data, and video• identify, solicit and secure technology funding for Missouri school districts• conduct annual technology survey• provide e-rate assistance to schools• identify, disseminate and/or promote fully accessible technology
B. Districts will build the capability to support the technologies / infrastructure. Districts will: <ul style="list-style-type: none">• establish at least one LAN with dedicated Internet connectivity using not more than 70% bandwidth capacity• connect all district buildings to a WAN• ensure that 100% of administrators, teachers and staff have access to the technologies• provide web services and email accounts• comply with CIPA filtering regulations, participate in the e-rate program and earmark the discounts (savings) for technology-related activities	The Department will work with others to: <ul style="list-style-type: none">• identify and promote standards and benchmarks to build adequate technology infrastructure• identify, disseminate, and promote tools to monitor and evaluate infrastructure adequacy, effectiveness, and usefulness• identify, share, and showcase best practices on effective and/or innovative programs that meet diverse needs
C. School buildings will be connected to the district LAN/WAN and the Internet. Buildings will: <ul style="list-style-type: none">• establish a LAN that connects to the district WAN and the Internet to support voice, data, and video• have a video conferencing system• have a multimedia distribution system that includes cable/TV reception, satellite/ITFS broadcast reception, and/or an internal video network with appropriate licenses	The Department will work with others to: <ul style="list-style-type: none">• help connect district buildings to local network and Internet• identify and promote technology-mediated courses and professional development programs• identify, share, and promote best practices on building and maintaining effective, equitable building technology plans and programs

(Continued)

Goal 4: Equitable access (continued)

- D. Instructional classrooms will be connected to the district LAN and the Internet. Classrooms will have:
- telephone access
 - 2:1 ratio of students per Internet-connected computer/ device
 - teacher workstations (computer, printing access, projection device and interactive whiteboard)
 - access to multimedia distribution system

The Department will work with others to:

- help connect instructional rooms to district/building network and Internet
- identify and promote classroom technology standards or benchmarks
- identify, develop, and/or promote assessment and reporting tools on access and use of classroom technology

Goal 5: All school administrators, teachers, and students will have adequate **technical support**

Objectives

- A. Districts will provide dedicated personnel to support education technology use. Districts will:
- employ a district Technology Coordinator/Director to oversee technical purchases, maintenance, upgrades and instructional support.
- B. Districts will provide buildings with adequate support. Buildings will have:
- 1.0 technical support FTE per building or 1.0 FTE per 300 workstations
 - 80% of the technical problems fixed in 24 working hours
 - 1.0 instructional technology support FTE per building or 1.0 FTE per 50 teachers

Strategies

The Department will work with others to:

- help schools secure, commit, implement, and evaluate school technical support needs and services
- identify and share best practices on district-supported technical support programs and services

The Department will work with others to:

- identify and promote technical support standards and benchmarks
- develop and promote assessment and reporting tools
- identify and share best practices and innovative programs that address diverse needs and interests

Appendix A: Education Technology Partners

Education Technology Partners

Effective implementation of the Missouri Education Technology Strategic Plan, 2002-2006, will require assistance from and collaboration with a variety of people and organizations. Below is an alphabetical listing of some of the key players that assist the Department in helping schools to effectively integrate technology. There are a great number of others who provide assistance, as well, and this list should not be considered inclusive. An asterisk (*) indicates the agency was represented during the development of the 2002 Missouri Education Technology Strategic Plan.

CBHE – Coordinating Board of Higher Education and

*** DHE – Dept. of Higher Education** <http://www.mocbhe.gov/>

The Department of Higher Education collaborates with DESE in a variety of technology-related programs and initiatives.

CTI – Committee on Technology and Instruction

CTI is a standing advisory committee to advise and make recommendations to the CBHE in order to advance the higher education agenda in the use of technology in the acceleration of learning and in the use of advanced technology in providing greater access to higher education opportunities in Missouri.

MLN – Missouri Learners Network <http://www.mocbhe.gov/Acadaf/rs/moln.htm>

A voluntary collaborative project that shares information about coursework available from participating Missouri institutions of Higher Education in an easy to use web-based directory.

K-20 Networking (See MOREnet)

Higher Education appropriations help set up Missouri's statewide Internet backbone. Public Libraries, K-12 schools, and state government agencies are also connected by this same backbone.

CISE – Center for Innovations in Education <http://www.coe.missouri.edu/~mocise/>

Provides professional development services and resources for those who insure all learners achieve their potential.

CORD – Center for Occupational Research and Development <http://www.cord.org>

A national nonprofit organization that provides innovative changes in education to prepare students for greater success in careers and higher education.

*** CSD – Cooperating School Districts** <http://info.csd.org/>

A nonprofit educational consortium providing cooperative purchasing, technology, staff development, legislative, human resource, research and financial services to public school districts in and around the St. Louis area. (See MOCIPP, PBS)

*** DESE – Dept. of Elementary and Secondary Education** <http://www.dese.state.mo.us/>

The administrative arm of the State Board of Education, the Department strives to assure that all citizens have access to high-quality public education. Primarily a service agency, DESE works with educators, legislators, government agencies, and others to maintain a strong public education system through its statewide school-improvement initiatives and regulatory functions. Listed below are a few of the technology-related programs and services in effect.

Education Technology Partners

DESE (continued)

Cisco Systems - Networking Academies

<http://www.dese.state.mo.us/divvoted/business/industrycert.htm>

Launched in 1997, the Cisco Academy is a comprehensive e-learning program offering 10 courses to provide students with Internet technology skills essential in a global economy. Missouri has five regional academies with approximately 49 local academies.

Core Data <http://www.dese.state.mo.us/divimprove/coredata/>

The online Core Data collects common data from each of the 524 local public school districts in the state of Missouri.

COT - Census of Technology

<http://www.dese.state.mo.us/divimprove/instrtech/statefunded/census/index.htm>

Annually, districts and school attendance centers submit core data related to technology planning, training, hardware, connectivity/distance learning, support, usage, and funding.

MarcoPolo <http://marcopolo.worldcom.com/>

MarcoPolo is partnership between WorldCom and seven renowned educational organizations created to produce six discipline-specific educational web sites. The web sites are geared primarily toward K-12 teachers, although some of the sites' resources are also appropriate for college-level work and for family activities. The MarcoPolo program provides no-cost, standards-based Internet content for the K-12 teacher and classroom, developed by the nation's content experts.

MSIP - Missouri School Improvement Program

<http://www.dese.state.mo.us/divimprove/sia/msip/>

The Missouri School Improvement Program has the responsibility of reviewing and accrediting the 524 school districts in Missouri within a five-year review cycle. The MSIP Standards and Indicators are created to guide school improvement.

Newsline <http://www.dese.state.mo.us/divimprove/instrtech/newsletters/newsletter.html>

The online newsletter from the Department's Instructional Technology section, *Newsline* provides monthly Instructional Technology program updates, upcoming deadlines, tips of the month, and articles from teachers on how technology is integrated in their classrooms.

Technology Advisory Committee

TAC, a statewide committee of K-20 educators, legislators, and others involved in telecommunications, provides advice and counsel on state technology programs and related initiatives.

Technology Grant Programs

<http://www.dese.state.mo.us/divimprove/instrtech/statefunded/video/index.htm>

The Video Instructional Development and Educational Opportunity program was enacted by the Missouri General Assembly in 1988 to encourage all educational institutions to supplement educational opportunities through telecommunications. The Outstanding Schools Act of 1993 established grants programs to promote the use of computers, connectivity, and other technologies to enhance teaching and learning. Programs include the Technology Acquisition and Enhancement (formula) grants and the Competitive Technology and Interactive Distance Learning grants.

Education Technology Partners

DESE (continued)

Technology Leadership Academy <http://successlink.org/tla/>

SuccessLink, in cooperation with the Bill and Melinda Gates Foundation and the Department of Elementary and Secondary Education, is sponsoring the Academy to assist administrators in developing the knowledge and skills necessary to use technology as a tool for more effective and efficient leadership in their schools.

*** GreaterNET** <http://www.greaternet.org>

GreaterNET is an independent, not-for-profit, member-based organization whose mission is to broker I-TV courses across Missouri and provide support services for K-12 schools involved in two-way interactive television.

*** HPR*TEC – High Plains Regional Technology in Education Consortium** <http://hprtec.org>

The Regional Technology in Education Consortia (R*TEC) program is established to help states, local educational agencies, teachers, school library and media personnel, administrators, and other education entities successfully integrate technologies into kindergarten through 12th grade (K-12) classrooms, library media centers, and other educational settings, including adult literacy centers. The High Plains organization serves Colorado, Kansas, Missouri, Nebraska, North Dakota, South Dakota, and Wyoming, covering 2.7 million students and 173,300 teachers, offering a tremendous network of experts.

MARE – Missouri Association of Rural Educators <http://schoolweb.missouri.edu/mare/>

MARE is an organization of school administrators, board members, teachers, parents, institutions, businessmen and women interested in serving rural community school districts in Missouri. The purpose of this association is to focus on the need and concerns unique to rural education, to provide a forum for the discussion and resolution of those needs and concerns, and to present a unified voice to promote rural education in Missouri.

*** MASL – Missouri Association of School Librarians** <http://www.maslonline.org/>

This statewide organization provides Missouri's school librarians with a variety of services including conferences, special white papers, professional development, scholarships and awards.

McREL – Mid-continent Research for Education and Learning <http://www.mcrel.org/>

The regional educational laboratories are educational research and development organizations supported by contracts with the U.S. Education Department, Office of Educational Research and Improvement (OERI).

*** METPA – Missouri Educational Technology Professionals Association**

<http://www.indep.k12.mo.us/metpa/metpa.htm>

Established in 2001 as a network of human and material resources to promote and support Missouri educational technology professionals in the areas of certification, equitable access, student knowledge adequate funding, and professional development.

MO-CAPE – Missouri Council for American Private Education <http://www.mocape.org>

The Council for American Private Education (CAPE) was founded in 1971 to create a unified voice for the interests of private schools across the country. In 1981, MO-CAPE formed as the first state affiliate of the national organization and has since been known as the voice of Missouri's private schools.

Education Technology Partners

Missouri State Library <http://mosl.sos.state.mo.us/lib-ser/libser.html>

Promotes the development and improvement of library services throughout the state. MSL collaborates with the Department and MOREnet to assist Missouri schools and libraries in applying for and benefiting from the Universal Service Fund's e-rate program.

MNG – Missouri National Guard <http://www.moguard.com/>

The National Guard has an extensive national education project involving distance education opportunities for guardsmen. The efforts in Missouri include partnering with many education-providing entities to make coursework readily available to their members.

*** MOCIPP – Missouri Council of Instructional Programming Providers**

Representatives from Cooperating School Districts, KCPT, KMOS, KOZK, and the MSBA Educational Satellite Network work together in providing quality television programming. They are able to leverage costs by making a single state application for programming they have in common. (See PBS)

*** MoDLA – Missouri Distance Learning Association** <http://www.modla.org/>

MoDLA promotes the effective application of distance learning strategies to maximize access, equity, and quality of educational resources for teachers and learners of all ages.

*** MOREnet – Missouri Research and Education Network** <http://www.more.net>

MOREnet provides high-speed, reliable Internet access to the state's public sector. Affiliated with the University of Missouri, MOREnet serves higher education, elementary and secondary education, public libraries, state agencies, and other organizations and government agencies in Missouri.

eMINTS - Enhancing Missouri's Instructional Networked Teaching Strategies

eMINTS supports Missouri educators as they integrate multimedia technology into inquiry-based, student-centered, interdisciplinary, collaborative teaching practices that result in improved student performance, increased parent involvement and enriched instructional effectiveness. <http://emints.more.net/>

eThemes is an extensive database of content-rich, age-appropriate resources organized around specific themes. These resources are created for educators to use in their classrooms. Although only teachers approved by the eMINTS Program may make resource requests, all educators are encouraged to search the extensive database of existing eThemes. <http://emints.more.net/ethemes/resources/>

MINTs - Multimedia Interactive Networked Technologies

Funded in cooperation with Southwestern Bell, MOREnet and Department of Elementary and Secondary Education, MINTs was the pilot project that was expanded into the eMINTS program. MINTs provided technology and professional development to 12 teachers in six St. Louis County school districts. <http://mints.more.net/>

TNP – DESE Technology Network Project <http://www.more.net/projects/dese/>

In its seventh year, this program continues to provide affordable Internet connectivity and services such as the EBSCO periodical database, Grolier's online encyclopedia, technical training, technical support and Internet services to more than 95% of Missouri school districts.

Education Technology Partners

*** MoROC – Missouri Rural Opportunities Council** <http://www.moroc.org/links.html>

This organization brings the public and private sectors together in a neutral forum to identify, explore and resolve rural issues through collaboration and consensus building.

*** MSBA – Missouri School Boards Association** <http://www.msbanet.org/>

This organization provides policy and political leadership at the local, state, and national levels to advance excellence in public education through school board leadership. (See MOCIPP, PBS)

OSEDA – Office of Social and Economic Data Analysis <http://www.oseda.missouri.edu/>

A unit of University Outreach and Extension at the University of Missouri, OSEDA informs community leaders and citizens about social and economic trends impacting the people and communities of the state of Missouri.

*** PBS – Public Broadcasting System**

Missouri's network of providers includes KMOS – Warrensburg, KCPT – Kansas City, KETC – St. Louis, KOZK – Springfield, and CSD – St. Louis. A variety of programs and services are available via these stations and ESN. Each has an extensive video library, with most resources correlated to the Missouri Show-Me Standards.

RCET-SW – Regional Consortium for Education and Technology Southwest

<http://www.rcet.net/>

A group of public schools, colleges and universities in Greene County and the surrounding area with the goal to assist educators in this area to use technology to its full advantage for the enhancement of instruction.

RPDCs – Regional Professional Development Centers

<http://www.dese.state.mo.us/divteachqual/rpdc/index2.html>

The nine statewide RPDCs provide high-quality professional development opportunities to Missouri educators, primarily in the form of workshops, technical assistance, and consulting on topics related to curriculum, assessment, and technology integration. RPDC leaders implement Technology Leadership Academy and MarcoPolo Professional Development Program.

Rural Schools and Community Trust

<http://www.dese.state.mo.us/divimprove/inststech/statefunded/ruralschooltrust.htm>

The Rural Trust is working to develop three Education Renewal Zones (ERZs) in Missouri that form collaborations among schools, communities, higher education institutions, the Missouri State Department of Elementary and Secondary Education, the Coordinating Board of Higher Education, a technical college, and four statewide technology support organizations.

ERZ -- Educational Renewal Zones

The ERZ Initiative in Missouri is a merger between the community-based educational philosophy of the Rural Trust, the needs of small rural schools in Missouri, and the opportunities afforded by Missouri's educational institutions, agencies, organizations, and infrastructure. Schools clustered around three colleges of education will work together to help prepare, develop, and retain rural teachers, facilitated by distance learning technologies.

Education Technology Partners

ERZ (Continued)

Associate Degree Program for Technology Coordinators – As part of the ERZ Initiative, Linn State Technical College will offer an option within its Networking Systems Technology degree for Technology Coordinators, which is focused on the needs of the rural high school and support of its technology. The first class will be enrolled for the summer session, 2002.

*** Show-Me TechKnowledge Committee**

This group of K-20 Missouri educators was formed in 2001 to establish a mechanism to recognize students and teachers who use technology to advance learning and improve student achievement in Missouri public schools. Committee members organized an annual Show-Me TechKnowledge Day (held in the Missouri State Capitol in March 2002) and worked with the Governor's Office to proclaim a Missouri Student Technology Week.

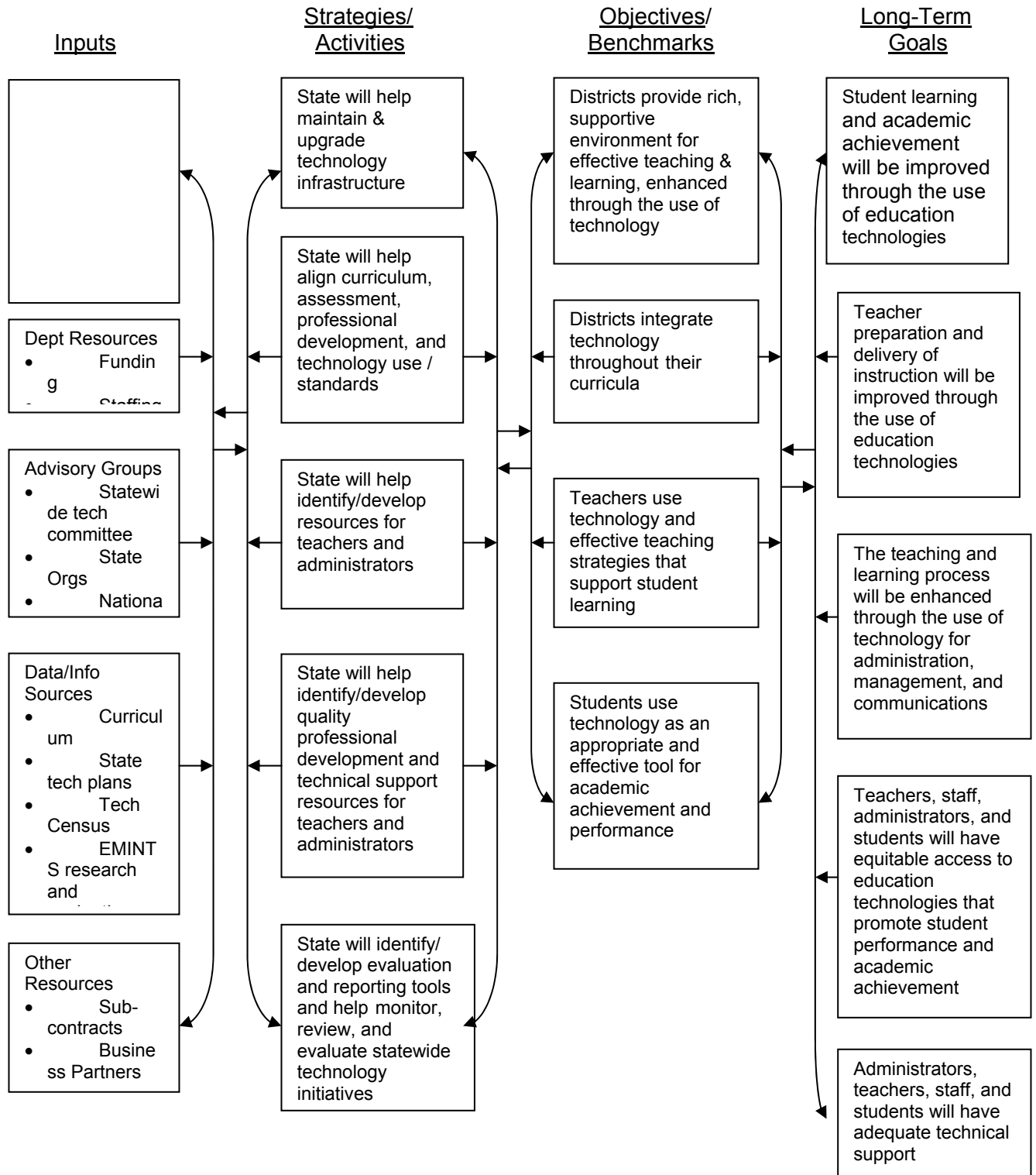
* **SuccessLink** – <http://www.successlink.org>/SuccessLink provides online resources that help link educational innovators across the state. Supported by the Department, SuccessLink helps administer the Technology Leadership Academy, TEAMS Distance Learning, and Missouri Elementary Science Connection. Online resources include Great Teaching Ideas, Jobs for Educators, and first-year teacher newsletter.

WWT -- World Wide Technology, Inc. <http://www.wwt.com>

WWT serves as the prime vendor / administrator of Missouri's state vendor contract, awarded through a competitive process. An electronic Procurement and Logistics (e-PL) company, WWT specializes in helping customers build and deploy IT infrastructure.

Appendix B: Logic Map

Logic Map of the Missouri Education Technology Plan



Appendix C: Action Plan

Action Plan

The Action Plan serves as an implementation and evaluation tool. For each strategy, the table documents the current status, those with primary responsibilities in completing the tasks, other participants and resources, the tool used to measure data and the target and completion dates.

Action Strategy	Current Status	Primary Lead	Participants and/or Resources	Measure/ Tool	Target Date	Comp. Date
Goal 1: Student Learning, Objective A: State Technology Standards						
The Department will work with others to:						
• Establish and endorse Missouri student technology standards	Show-Me Standards	Instructional Technology	METPA, State Board, TAC	State Board action to adopt ISTE/ NETS	10/02	
• Review and update curriculum frameworks to integrate technology into curriculum, assessment, and professional development	Show-Me Standards	Instructional Technology	Curriculum consultants, LA/ MarcoPolo resources, RPDCs, selected teachers / practitioners	Frameworks posted (developed & disseminated)	01/04	
• Develop and promote assessment tools for student performance	COT	Instructional Technology	Curriculum and Assessment staff, HPR*TEC, METPA, RPDCs, TAC	COT, RTEC tool posted	01/04	
• Develop and promote reporting tools for student performance	COT	Instructional Technology	HPR*TEC, METPA, RPDCs, SuccessLink, TAC	COT, RTEC tool posted	01/04	
Goal 1: Student Learning, Objective B: District Technology Standards						
The Department will work with others to:						
• Assist schools in incorporating standards into curriculum guides, technology plans, and school improvement plans	Third cycle MSIP standards	Instructional Technology	Curriculum and Assessment staff, Federal Instructional Improvement staff, RPDCs, SuccessLink, Supervision staff	MSIP curriculum review, Technology plans	Ongoing	

Action Plan

<ul style="list-style-type: none"> Identify and promote e-MINTS training and resources to promote technology integration and use 	400+ teachers in 125 districts	Instructional Technology	Colleges of Education, Curriculum and Assessment, Federal Instructional Improvement, McREL, MOREnet, RPDCs	MOREnet/eMINTS training data	Ongoing	
<ul style="list-style-type: none"> Identify and showcase best practices, curricula, student projects/products, etc. 	First Technology fair, conference exhibits, <i>Newsline</i>	Instructional Technology	Curriculum/Assessment, Instructional Improvement, MOREnet, <i>Newsline</i> , Show-Me TechKnowledge, SuccessLink	Articles, awards, events, exhibits, surveys	Ongoing	
Goal 1: Student Learning, Objective C: Converged Learning The Department will work with others to:						
<ul style="list-style-type: none"> Help districts find and provide interactive distance learning courses 	200 districts	Instructional Technology	CBHE/MLN, GreaterNET, LACOE, MoDLA, MNG	COT, MLN, MoDLA data	Ongoing	
<ul style="list-style-type: none"> Identify and provide training on development, delivery, and technical support of technology-delivered courses 	Regional courses, MoDLA survey	Instructional Technology	METPA, MoDLA, MOREnet	Training records, COT, MoDLA data	Ongoing	
<ul style="list-style-type: none"> Identify and purchase television programming rights and electronic resources for state, group and district rights 	24 series	Instructional Technology	LACOE, MASL, MOCCIP, MOREnet/TNP, MoROC, TCRCs, WWT	COT, MLN, MoDLA data	Ongoing	
Goal 2: Teacher Preparation and Delivery of Instruction, Objective A: State Technology Standards The Department will work with others to:						
<ul style="list-style-type: none"> Establish and endorse Missouri teacher and administrator technology standards 	Show-Me Standards	Instructional Technology	Administrator organizations, METPA, State Board, TAC	State Board action to adopt ISTE/NETS for Teachers	10/03	

Action Plan

<ul style="list-style-type: none"> Review and update teacher and administrator evaluation models to include technology 	PBTE	Instructional Technology	Administrator organizations, colleges of education, METPA MOREnet/eMINTS, RPDCs, SuccessLink/TLA, TAC	Tools posted	05/04	
<ul style="list-style-type: none"> Develop and promote assessment and reporting tools to include appropriate integration of technology 	COT	Instructional Technology	HPR*TEC, METPA RPDCs, MOREnet/eMINTS, SuccessLink, TAC	COT, RTEC tool	Tools developed 01/04, promotion ongoing	
Goal 2: Teacher Preparation and Delivery of Instruction, Objective B: District Technology Standards The Department will work with others to:						
<ul style="list-style-type: none"> Incorporate technology in teacher recruitment and selection process and tools 	PBTE	Instructional Technology	Administrator organizations, METPA, MOREnet/eMINTS, SuccessLink, TAC	Models posted	06/03	
<ul style="list-style-type: none"> Identify and promote training that results in effective technology integration into the curriculum 	Web site <i>Newsline</i>	Instructional Technology	Colleges of education METPA, MOREnet/eMINTS, McREL, SuccessLink, TAC	COT, RTEC tool	06/03	
<ul style="list-style-type: none"> Promote teacher technology skills 	COT	Instructional Technology	HPR*TEC, METPA, MoDLA, MOREnet, Regional consortia, RPDCs, SuccessLink	COT, RTEC tool	01/04	
Goal 2: Teacher Preparation and Delivery of Instruction, Objective C: Instructional Teaching Strategies The Department will work with others to:						
<ul style="list-style-type: none"> Promote collaboration among classroom, library and technology teachers 	Unknown	Instructional Technology	MASL, McREL, METPA, Success-Link/TLA, MOREnet/eMINTS, Teacher organizations	COT, RTEC tool	Tools 04/03 Promotion ongoing	

Action Plan

<ul style="list-style-type: none"> Identify and showcase best practices on effective professional development training/ programs, collaboration models, instructional strategies, and resources 	<i>Newsline</i> , conference	Instructional Technology	Colleges of Education, conferences, HPR*TEC, <i>Newsline</i> , RPDCs, SuccessLink	Articles, awards, events, exhibits, surveys	Ongoing	
<ul style="list-style-type: none"> Promote alignment of technology standards in teacher education programs 	Unknown	Instructional Technology	CBHE/MLN, Colleges of education, HPR*TEC, RPDCs	Alignment posted	Ongoing	
Goal 3: Administration, Management and Communications, Objective A: Local Technology Planning The Department will work with others to:						
<ul style="list-style-type: none"> Identify and provide district technology plan development and implementation resources 	Website	Instructional Technology	HPR*TEC, McREL, MOREnet, Technology plan task force and readers	Use of tools and scoring guide	04/02	
<ul style="list-style-type: none"> Help districts align new technology plans to federal and state technology plans 	Website	Instructional Technology	HPR*TEC, McREL, MOREnet, Technology plan task force and readers	Plans approved with current scoring guide	04/02	
Goal 3: Administration, Management and Communications, Objective B: School Data Management The Department will work with others to:						
<ul style="list-style-type: none"> Establish and endorse technology standards for Missouri school administrators 	Show-Me Standards	Instructional Technology	Administrator organizations, METPA, State Board, TAC	State Board action to adopt ISTE/NETS for Administrators	10/03	
<ul style="list-style-type: none"> Identify and promote technology tools for knowledge management 	First Technology Leadership Academy	Instructional Technology	HPR*TEC, McREL, MoDLA, MOREnet, SuccessLink/web site and TLA, Technology conferences, WWT	COT, RTEC tool	Ongoing	
<ul style="list-style-type: none"> Solicit, identify and provide white papers, open forum presentations and other information regarding technology vendors, networking, filtering, distance learning, etc. 	<i>Newsline</i> , <i>conference</i>	Instructional Technology	Conference exhibits, HPR*TEC, McREL, METPA, MoDLA, MOREnet, <i>Newsline</i> , RPDCs, SuccessLink,	COT, RTEC tool	Ongoing	

Action Plan

Goal 3: Administration, Management and Communications, Objective C: Communications and Outreach

The Department will work with others to:

<ul style="list-style-type: none"> Identify and promote technology tools and practices that facilitate parent and community communications 	COT, Newline	Instructional Technology	HPR*TEC, McREL MoDLA, MOREnet PPP, SuccessLink/ web site and TLA, conferences, WWT	COT, articles, awards, events, exhibits, surveys	Ongoing	
<ul style="list-style-type: none"> Identify and promote best practices on forming collaborative relationships, through effective use of digital content and networked applications 	Newline	Instructional Technology	Colleges/universities, HPR*TEC/ Track Star, Marco Polo, MOREnet /eThemes, PBS/ MATHLINE and video resources, SuccessLink /TEAMS	Articles, awards, events, exhibits, surveys	06/06	

Goal 4: Equitable Access, Objective A: Converged Technology

The Department will work with others to:

<ul style="list-style-type: none"> Identify, solicit and secure funding sources for Missouri school districts 	State funds	Instructional Technology	Legislators, METPA, MoDLA, MOREnet State Board	Funds secured and programs implemented	Ongoing	
<ul style="list-style-type: none"> Help districts provide equitable access to technologies that converge voice, data and video 	COT	Instructional Technology	MoDLA, MNG, MOREnet, WWT	COT, MOREnet/TNP records	Ongoing	

Goal 4: Equitable Access, Objective B: District Infrastructure

The Department will work with others to:

<ul style="list-style-type: none"> Identify and promote standards and benchmarks to build adequate technology infrastructure 	COT	Instructional Technology	HPR*TEC, METPA MOREnet, TAC	COT, MOREnet/TNP records, RTEC tools	Ongoing	
<ul style="list-style-type: none"> Identify and promote tools to monitor and evaluate infrastructure adequacy, effectiveness and usefulness 	COT	Instructional Technology	HPR*TEC, McREL	COT, MOREnet records, RTEC tools	Ongoing	

Action Plan

<ul style="list-style-type: none"> Identify and showcase best practices of effective and/or innovative programs that meet diverse needs and interests 	Conferences <i>Newsline</i>	Instructional Technology	<i>Newsline</i> , Show Me TechKnowledge, SuccessLink	Articles, awards, events, exhibits, surveys	Ongoing	
Goal 4: Equitable Access, Objective C: Building Connectivity The Department will work with others to:						
<ul style="list-style-type: none"> Help districts provide equitable access to all buildings 	COT	Instructional Technology	Technology programs, MOREnet/Cisco	COT	Ongoing	
<ul style="list-style-type: none"> Develop and promote assessment and reporting tools to monitor and evaluate building infrastructure 	COT	Instructional Technology	MOREnet, McREL, METPA, HPR*TEC	COT		
<ul style="list-style-type: none"> Help identify and promote technology mediated courses, programs and or professional development 	MLN	Instructional Technology	CBHE/MLN, GreaterNET, MoDLA,	COT, MLN, MoDLA records	Ongoing	
<ul style="list-style-type: none"> Identify and showcase best practices on building and maintaining effective building technology plans and programs 	Newsline	Instructional Technology	HPR*TEC, McREL, METPA, MOREnet,	Articles, awards, events, exhibits, surveys	Ongoing	
Goal 4: Equitable Access, Objective D: Classroom Access The Department will work with others to:						
<ul style="list-style-type: none"> Help districts connect all instructional rooms to building/district network and internet 	COT	Instructional Technology	Technology programs, MOREnet/Cisco	COT	N/A	
<ul style="list-style-type: none"> Help districts build and maintain adequate technology suitable for instructional rooms 	COT	Instructional Technology	Technology programs, MOREnet	COT	N/A	
<ul style="list-style-type: none"> Identify and promote statewide classroom technology standards or benchmarks 	COT	Instructional Technology	HPR*TEC, McREL, METPA, MOREnet	COT	05/04	
<ul style="list-style-type: none"> Identify and promote statewide assessment and reporting tools on access and use of classroom technology 	COT	Instructional Technology	HPR*TEC, McREL, MOREnet	COT, RTEC tool	05/04	

Goal 5: Technical Support, Objective A: Support Personnel

The Department will work with others to:

• Help districts provide adequate technical support (staff and services)	COT	Instructional Technology	Cisco, Conferences, Gen Y/ like programs, HPR*TEC, Linn State Technical College, McREL, MoDLA, MOREnet, <i>Newsline</i>	COT	05/04	
• Identify and showcase best practices on district technical support services and programs	Newsline	Instructional Technology	HPR*TEC, McREL, MOREnet, SuccessLink	Articles, awards, events, exhibits, surveys	Ongoing	

Goal 5: Technical Support, Objective B: Technical Support Standards

The Department will work with others to:

• Identify and promote technical support standards and benchmarks	COT, <i>Newsline</i>	Instructional Technology	HPR*TEC, McREL , METPA, MOREnet	Standards posted	Ongoing	
• Adopt and promote assessment and reporting tools to evaluate technical support needs and services	COT	Instructional Technology	HPR*TEC, McREL, MOREnet, SuccessLink/TLA	COT, RTEC and McREL tools	Ongoing	
• Identify and showcase best practices and innovative programs that address diverse needs and interests	Newsline	Instructional Technology	HPR*TEC, Linn State Technical College, McREL, METPA, MOREnet, SuccessLink	Articles, awards, events, exhibits, surveys	Ongoing	

Appendix D: Status Report

Status Report

The 2002 Missouri Education Technology Strategic Plan includes 5 major goals and 15 objectives to be reached by June 30, 2006. The table below benchmarks the progress of those goals. Most of the information is gathered through the annual Missouri Census of Technology and technology program records and reports.

Technology Goal & Success Benchmarks	Status					
	2001 Base	2002	2003	2004	2005	2006 Goal
Goal 1: Student learning (academic achievement and performance) will be improved through the use of education technologies						
Missouri State Board of Education will establish and endorse student technology standards	No					Yes
Students will be computer literate (be able to perform basic computer skills) by age 12	84%					100%
Students will routinely use the following technologies in their classrooms:						
• Educational software	78%					100%
• Web	52%					100%
Students will routinely use technology for the following functions:						
• Presentations	23%					100%
• Writing assignments	52%					100%
• Research information collection	49%					100%
A representative sample of eMINTS students will score satisfactory or above on the third grade reading component of the MAP	N/A					100%
The percentage students in the eMINTS sample group, scoring at the Step 1 and Progressing achievement levels on the MAP will decrease by 5% each year						
• Grade 3, Communication Arts	19.5%					<1.0%
• Grade 3, Science	11.2%					<1.0%
• Grade 4, Mathematics	13.0%					<1.0%
• Grade 4, Social Studies	16.1%					<1.0%

Status Report

Technology Goal & Success Benchmarks	Status					
	2001 Base	2002	2003	2004	2005	2006 Goal
Goal1: Student Learning (Continued)						
Students in the eMINTS sample with special statuses will continue to perform better, on average, than non-eMINTS students in similar statuses, as indicated by mean differences in MAP scores						
<ul style="list-style-type: none"> Title I/FRL students <ul style="list-style-type: none"> Communication Arts Science Mathematics Social Studies IEP students <ul style="list-style-type: none"> Communication Arts Science Mathematics Social Studies 	5.0/ 3.2 3.1/ 2.3 23.8/10.3 14.9/ 8.5 5.9 10.1 8.9 8.9					>3.0 >3.0 >3.0 >3.0 >3.0 >3.0 >3.0 >3.0
High schools will provide courses via distance learning	39%					75%
Goal 2: Teacher preparation and delivery of instruction (performance) will be improved through the use of education technologies						
Missouri State Board of Education will establish and endorse teacher technology standards	No					Yes
Teachers will possess intermediate or advanced technology skills	72%					100%
Teachers will routinely use the following technologies in their classrooms:						
<ul style="list-style-type: none"> Educational software Web 	59% 67%					100% 100%
Teachers will routinely use technology for the following functions:						
<ul style="list-style-type: none"> Computer-generated presentations Writing assignments Research information collection Lesson plan development Data management (student records) Track student performance Assess student learning Instructional delivery and presentation 	29% 60% 56% 45% 46% 48% N/A 29%					100% 100% 100% 100% 100% 100% 100% 100%
Elementary buildings will have at least two teachers who are eMINTS certified (completed two years)	11%					50%

Status Report

Technology Goal & Success Benchmarks	Status					
	2001 Base	2002	2003	2004	2005	2006 Goal
Goal 3: The teaching and learning process will be enhanced through the use of technology for administration, management, and communications						
Missouri State Board of Education will establish and endorse administrator technology standards	No					Yes
Districts will have a board-approved technology plan that	100%					100%
• Is tied to school improvement plans	98%					100%
• Addresses all five technology focus areas	N/A					100%
• Earmarks 25% of the technology budget for professional development	N/A					100%
• Includes participation in the e-rate program	70%					100%
○ Earmarks savings for technology	N/A					100%
Districts will form partnerships with business and/or higher education to help with technology planning, implementation, and evaluation	32%					50%
Administrators will possess intermediate or advanced technology skills						
• Principals	87%					100%
• District administrators	84%					100%
Administrators will routinely use the following technologies:						
• Internet/Web	71%					100%
• Email communications	74%					100%
Principals will routinely use technology for the following functions:						
• Data management (student records)	60%					100%
• Track student performance	56%					100%
• Assess student learning	N/A					100%
• Communicate with parents	48%					100%
Districts develop and maintain a technology-mediated feedback mechanism for parents and patrons	N/A					XXX
Goal 4: School administrators, teachers, staff, and students will have equitable access to education technologies that promote student performance and academic achievement						
Districts will build and maintain a LAN	90%					100%
• Dedicated connection to the Internet	96%					100%
• Not exceeding 70% of bandwidth capacity	N/A					100%
• Provides web services	65%					100%
• Provides email services	73%					100%
School buildings will be connected to the district LAN/WAN and supports voice, data, and video						
• Building LAN	72%					100%
• Dedicated connection to the Internet	73%					100%
• Connected to district LAN/WAN	59%					100%

Status Report

Technology Goal & Success Benchmarks	Status					
	2001 Base	2002	2003	2004	2005	2006 Goal
Goal 4: equitable access (Continued)						
Districts will build and maintain a LAN	90%					100%
• Dedicated connection to the Internet	96%					100%
• Not exceeding 70% of bandwidth capacity	N/A					100%
• Provides web services	65%					100%
• Provides email services	73%					100%
School buildings will be connected to the district LAN/WAN and supports voice, data, and video						
• Building LAN	72%					100%
• Dedicated connection to the Internet	73%					100%
• Connected to district LAN/WAN	59%					100%
School buildings will have videoconferencing capacity						
• I-TV and/or IP-based videoconferencing	XXX					XXX
• Multimedia distribution system (cable/TV, satellite, and/or Internet network)	XXX					XXX
Classrooms will be equipped with						
• Telephone access	62%					100%
• Internet-connected computer	55%					100%
• 2:1 ratio of students per Internet-connected computer	5.0:1					2:1
• Full teacher workstations (dedicated computer, projection device & interactive whiteboard, and printing access)	11%					50%
Goal 5: School administrators, teachers, staff, and students will have adequate technical support						
Districts will employ/contract technical support staff						
• One full-time, on-site district technology director	N/A					100%
Buildings will have on-site technical support						
• One technical FTE per building or 1 for every 300 workstations	N/A					100%
• One instructional technology FTE per building or 1 for every 150 teachers	N/A					100%

Final Status Report - 2006

The 2002-06 Missouri Education Technology Strategic Plan included five major goals and 15 objectives to be reached by June 30, 2006. The original table provided baseline data, established in 2001, and the expected levels to be reached by 2006, the end of the five-year plan. The table below provides annual up-date information and serves as the final status report for the 2002-06 plan.

NOTES: Most of the information is gathered through the annual Missouri Census of Technology (COT) and technology program records and reports. For 2006, COT data were collected from 524 districts and 2,229 school buildings. Note that COT reporting excludes juvenile centers, special education cooperatives, buildings where attendance is reported at another building (such as a gifted center), or other buildings with no enrollment.

Technology Goal & Success Benchmarks	Status [NA means no data available]						
	2001 Base	2002	2003	2004	2005	2006 Goal	2006 Actual
Goal 1: Student learning (academic achievement and performance, including technology literacy) will be improved through the use of education technologies							
Missouri State Board of Education will establish and endorse student technology standards	No	Yes – June	Met	Met	Met	Yes	Yes
Districts will establish or endorse student technology standards <i>(item added to 2003 COT)</i>	NA	NA	85% (448)	88% (459)	90% (469)	100%	93% (484)
Students will be computer literate (be able to perform basic computer skills) by age 12 <i>(item changed to “technologically literate” in 2003 COT and moved from 6th-grade to 8th-grade in 2004)</i>	84%	86%	86%	86%	90%	100%	90%
Students will routinely use the following technologies in their classrooms: • Educational software <i>(“routine” defined as three times per week in 2004)</i>	62%	75%	80%	81%	80%	100%	79%
Students will routinely use technology for the following functions: • Produce media presentations • Produce written assignments • Conduct online research <i>(“routine” defined as three times per week in 2004)</i>	23% 52% 49%	32% 65% 59%	37% 68% 63%	29% 46% NA*	40% 59% 53%	100% 100% 100%	43% 60% 56%
High schools will provide courses via distance learning ¹	39%	39%	*	*	*	75%	*

* Data element not included in the Census of Technology. ¹ In 2001 and 2002, high school distance learning data were derived from grant program files, a program that was discontinued after 2002.

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Technology Goal & Success Benchmarks	Status [NA means no data available]						
	2001 Base	2002	2003	2004	2005	2006 Goal	2006 Actual
Goal 2: Teacher preparation and delivery of instruction (performance, including technology literacy) will be improved through the use of education technologies							
Missouri State Board of Education will establish and endorse teacher technology standards	No	Yes - June	Met	Met	Met	Met	Met
Districts will establish or endorse technology standards for teachers <i>(item added to 2003 COT)</i>	NA	NA	77% (402)	79% (414)	79% (412)	100%	83% (434)
Districts will integrate technology into the following core curriculum areas:							
• Communication arts	NA	NA	96% (502)	95% (497)	96% (505)	100%	98% (512)
• Mathematics	NA	NA	90% (469)	86% (451)	88% (463)	100%	92% (481)
• Science	NA	NA	90% (472)	87% (454)	90% (474)	100%	94% (494)
• Social studies <i>(item added to 2003 COT and "curriculum integration" defined in 2004)</i>	NA	NA	89% (464)	85% (444)	88% (462)	100%	92% (483)
Teachers will possess intermediate or advanced technology skills <i>(skill levels defined for 2003 COT)</i>	72%	76%	79%	81%	81%	100%	82%
Teachers will routinely use the following technologies in their classrooms:							
• Educational software <i>("routine" defined as three times per week in 2004)</i>	59%	71%	76%	78%	78%	100%	76%
Teachers will routinely use technology for the following functions:							
• Computer-generated presentations	29%	37%	43%	47%	48%	100%	51%
• Writing assignments	60%	71%	77%	81%	79%	100%	80%
• Research information collection	56%	67%	74%	75%	75%	100%	76%
• Lesson plan development	45%	59%	64%	66%	66%	100%	68%
• Data management (student records)	46%	56%	64%	70%	73%	100%	76%
• Track student performance	48%	61%	69%	74%	75%	100%	77%
• Assess student learning	NA	55%	64%	69%	70%	100%	72%
• Instructional delivery and presentation <i>("routine" defined as three times per week in 2004)</i>	29%	38%	46%	51%	57%	100%	60%

* Data element not included in the Census of Technology.

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Technology Goal & Success Benchmarks	Status [NA means no data available]						
	2001 Base	2002	2003	2004	2005	2006 Goal	2006 Actual
Goal 2: Teacher preparation and delivery of instruction (performance, including technology literacy) will be improved through the use of education technologies (continued)							
Teachers will be able to appropriately integrate technology in curriculum and instruction <i>(item added to 2003 COT and fully defined for 2004)</i>	NA	NA	41%	53%	50%	75%	50%
Elementary buildings will have one or more eMINTS certified teachers – teachers who have completed at least one year of eMINTS training (N = 1,136)	11% (125)	16% (181)	21% (238)	24% (277)	30% (345)	50%	40% (459)
Goal 3: The teaching and learning process will be enhanced through the use of technology for administration, management, and communications							
Missouri State Board of Education will establish and endorse administrator technology standards	No	Yes- June	Met	Met	Met	Yes	Met
Districts will have a State-approved technology plan that	100%	100%	100%	Met	Met	100%	100%
• is tied to school improvement plans	98% NA	10 / 10 10	10+447 457	457+67 524	Met	100%	100%
• addresses all five technology focus areas	NA	Yes	Yes	Yes	Met	100%	100%
• includes district participation in the E-rate program (Non-MOREnet related)	70% (369)	65% (337)	77% (374)	73% (381)	79% (414)	100%	78% (404)
◦ Earmarks portion of savings for technology	NA	36%	74%	74%	80% Met	75%	80%
• indicates participation in MOREnet Network Projects and E-rate programs	97% (510)	97% (510)	97% (511)	98% (512)	98% (512)	100%	98% (513)
Districts will form partnerships with business and/or higher education to help with technology planning, implementation, and evaluation	32%	27%	31%	60% Met	Met	50%	Met
Administrators will possess intermediate or advanced technology skills							
• Principals <i>(skill levels defined for 2003 COT)</i>	82%	82%	90%	92%	91%	100%	92%
Districts will provide email accounts to the following staff							
• Administrators	NA	NA	96% (504)	98% (515)	96% (502)	100%	97% (508)
• Teachers	NA	NA	95% (499)	97% (510)	94% (495)	100%	95% (498)
• Support services staff <i>(item added to 2003 COT)</i>	NA	NA	91% (477)	94% (494)	90% (472)	100%	92% (482)

Final Status Report

Technology Goal & Success Benchmarks	Status [NA means no data available]						
	2001 Base	2002	2003	2004	2005	2006 Goal	2006 Actual
Goal 3: The teaching and learning process will be enhanced through the use of technology for administration, management, and communications (continued)							
Building administrators will routinely use the following technologies: • Educational software <i>("routine" defined as three times per week in 2004)</i>	34%	86%	41%	43%	43%	50%	44%
Principals will routinely use technology for the following functions: • Data management (student records) • Track student performance • Assess student learning • Communicate with peers, parents, experts, others <i>("routine" defined as three times per week in 2004)</i>	60%	71%	81%	83%	82%	100%	85%
	56%	67%	78%	81%	80%	100%	84%
	NA	58%	67%	72%	71%	100%	74%
	48%	63%	79%	87%	93%	100%	95%
Buildings will develop and maintain at least one technology-mediated feedback mechanism for parents and patrons	NA	45% (948)	95% (2132)	94% (2078)	96% (2132)	100%	98% (2178)
Goal 4: School administrators, teachers, staff, and students will have equitable access to education technologies that promote student performance and academic achievement							
Districts will build and maintain a LAN • Dedicated connection to the Internet	96%	93%	94% (2150)	97% (2134)	99.4% (2198)	100%	99.8% (2225)
• T1 connection or better	NA	NA	85% (1911)	90% (1988)	95% (2101)	100%	97% (2155)
• Not exceeding 70% of bandwidth capacity ¹	NA	**	**	**	**	100%	MET
• Districts receiving additional bandwidth (via MOREnet Network Program) <i>(item changed to "dedicated" connection in 2002, moved to Building COT in 2003, and terms defined for 2004 COT)</i>	NA	20	23	49	86	As needed	171

¹ Objective is basically met as MOREnet TNP serves 98% of districts and provides additional bandwidth as needed.

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Technology Goal & Success Benchmarks	Status [NA means no data available]						
	2001 Base	2002	2003	2004	2005	2006 Goal	2006 Actual
Goal 4: School administrators, teachers, staff, and students will have equitable access to education technologies that promote student performance and academic achievement (continued)							
School buildings will be connected to the district LAN/WAN and supports voice, data, and video							
• Building LAN	72%	91%	96%	94%	99%	100%	99%
• Dedicated connection to the Internet	73%	91%	98%	97%	99%	100%	99%
• Connected to district LAN/WAN	59%	72%	80%	80%	87%	100%	92%
• Percent computers connected ¹	NA	NA	88%	94%	96%	100%	96%
• Providing Web-hosting services	NA	NA	NA	47%	*	*	*
• Districts providing email services (items added and others revised in 2003 and all terms defined for 2004 COT)	NA	NA	50%	60%	95%	100%	97%
School buildings will have videoconferencing capacity						100%	
• I-TV videoconferencing	NA	11% (239)	17% (390)	17% (379)	21% (471)	50%	19% (434)
• IP-based videoconferencing ² desktop/interactive web-based/non-interactive	NA	10% (205)	49% (1107)	40% (893)	44% (12% & 32%)	50%	48% (12 & 36%)
• Satellite	NA	8% (163)	29% (642)	23% (518)	18% (399)	50%	18% (405)
• Cable television (distance learning technologies/modes of delivery defined for 2004 COT)	NA	13% (285)	61% (1371)	58% (1276)	52% (1140)	50%	53% (1191)
Classrooms will be equipped with							
• Telephone access	62%	51%	56%	57%	***	100%	60%
• Internet-connected computer	55%	80%	86%	88%	***	100%	90%
• Number of students per Internet-connected computer	5.0	4.3	4.0	3.26	3.4	2:1	2.96
Full teacher workstations (computer, projection device, interactive whiteboard, printing access) (terms defined for 2004 COT)	11%	20%	23%	26%	***	50%	32%

* Data element not included in the Census of Technology (Web hosting was moved to District Census in 2005).

*** Unable to derive reliable statistics from data collected in 2005.

¹ Internet-connected computer statistic does not include handheld devices.

² Beginning in 2005, COT distance learning item distinguished between interactive and non-interactive videoconferencing.

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Technology Goal & Success Benchmarks	Status [NA means no data available]						
	2001 Base	2002	2003	2004	2005	2006 Goal	2006 Actual
Goal 5: School administrators, teachers, staff, and students will have adequate technical support							
Districts will employ/contract technical support staff <ul style="list-style-type: none"> One full-time, on-site district technology director 	NA	State average 1.88 Median District 0.9	State average 2.18 Median District 1.0	State average 2.09 Median District 1.0	State average 2.10 Median District 1.0	100% Bldgs Median District ≥1.0	State average 2.21 Median District 1.0
Buildings will have on-site technical support <ul style="list-style-type: none"> One technical FTE per building or 1 for every 300 workstations One instructional technology FTE per building or 1 for every 150 teachers Typical length of time to resolve routine technical problems/repairs is 3 days or less At least 95% of computers are in working order during a typical day <i>(items about building-level technical and instructional staff added to 2003 COT and items about typical repairs and computers in working order added in 2004)</i>	NA	Overall average of 1.17 staff per building	.30	*	96% Bldgs / Median 1.0	100% Bldgs / Median ≥1.0	95% Bldgs / Median 1.0
	NA		.71	*	93% Bldgs / Median 1.0	100% Bldgs / Median ≥1.0	95% Bldgs / Median 1.0
	NA	NA	NA	56%	82%	100%	81%
	NA	NA	NA	96%	98%	100%	98%

* Data element not included in the Census of Technology or not reportable.